

B. Remarks

The present amendment is proffered in response to the pending Office Action of 3 December, 2002, in which all of pending claims 8-20 stand rejected. Applicants respectfully request entry and consideration of the present amendment, and passage of the present U.S. patent application to issuance in view thereof.

In the Office Action, the Examiner objects to Applicants' purported priority claim. Applicants have not made, and are not making, any claim for priority based on any patent application other than the present patent application. The citation to case 09/886,823 in paragraph 46 is made simply for the purpose of indicating to the reader a source for information on general alternate methods of forming the fin structure as shown in Fig. 9. The specific method of forming the fin structures of the invention is fully disclosed in paragraphs 47 et. seq. To the extent the claims of the present invention are directed to fin structures and methods of formation, those methods are those set forth in paragraphs 47 et seq. As such, the citation to the previous patent application was not for the purpose of making a priority claim, since the process descriptions therein are superfluous to the process description of the invention. Therefore, Applicants make no priority claim based on application 09/886,823.

In the Office Action, claims 14 and 20 stand rejected under 35 U.S.C. 112, second paragraph ("112/2") for including the phrases "fin structure" and "within and abut". Applicants respectfully submit that the phrase "fin structure" has a clear meaning as established by the specification - a "fin structure" is the etched silicon layer 208 as shown in Figs. 9-13. See paragraphs 46-57 for a general description of several methods of forming transistors that include the "fin structure" (a phrase used a number of times in the description) from layer 208. Applicants respectfully submit that the phrase "fin structure" would be readily apparent to a person of ordinary skill in the art given its usage in claim 14 as well as the foregoing portions of the specification in which the phrase is utilized; as such, use of that phrase in claims 14 and 20 is consistent with the requirements of 112/2. As to the phrase "within and abut," Applicants have amended claim 14 to delete the phrase objected to by the Examiner in favor of wording that clearly indicates that the

source/drain (S/D) regions abut the fin structure and have upper surfaces that are lower than that of the fin structure. This language is fully supported in Fig. 12 and paragraph 56 of the specification. Specifically, note that S/D regions 220 abut fin structure 208 and have upper surfaces that are below that of fin structure 208.

Finally, in the Office Action all of pending claims 8-20 stand rejected under 35 USC 103(a) in view of the combination of the teachings of the Wu et al (USP 5,994,747) and Houston (USP 6,045,625) patents. In response, Applicants respectfully submit that this combination of references neither teaches nor suggests the claimed invention. Turning first to claim 8, note first that the invention is recited as having two recesses that extend through the semiconductor layer and the first of two buried insulator layers beneath the semiconductor layer. The two recesses define a silicon body region between them, with source and drain regions subsequently formed in the recesses. This recited structure is shown e.g. in Fig. 5 of the present specification - a set of recesses are formed through the semiconductor layers 208, 201 and the first buried insulator layer 206. Such a structure is not taught by Wu. Wu simply shows a semiconductor that is partially etched with the gate in place (see Fig. 4 of Wu). There is no buried insulator (let alone two buried insulators as recited); and there is no recess that extends through the semiconductor layer as recited. Applicants further respectfully submit that the Houston reference neither teaches nor suggests these recitations. In Fig. 5C, Houston shows a trench 40 that extends through a first silicon dioxide layer 14a, a second silicon dioxide layer 14c, and an intermediate layer 14b "having a thermal co-efficient of expansion similar to that of the silicon substrate 12. For example, layer 14B may comprise polysilicon, nitridized oxide, or silicon nitride." (Col. 2, lines 48-50). All of these layers are formed below a silicon layer 16. The trench 40 is silicided and filled with a conductor 36 to provide a contact between the upper silicon layer 16 and the lower silicon layer 12. As such, note that the trench must extend through both insulator regions 14a and 14c; if it did not, there would be no conductive contact between silicon regions 16 and 12, which is the whole point of the embodiment shown in Fig. 5 of Houston (see Col. 5, lines 30-34). That is not the case in the invention as recited in claim 8 - the trench only extends through one of the two insulator regions, such that insulation remains between the body region and source and drain regions subsequently formed above the remaining insulator, and the silicon base below it.

Applicants further respectfully submit that a person of ordinary skill in the art, even if motivated to combine the teachings of the Wu and Houston patents, would not replicate the recited invention because in doing so they would render the Fig. 5 embodiment of Houston inoperable for its intended purpose. As such, Applicants respectfully submit that the combination of the Wu and Houston patents as suggested by the Examiner neither teaches nor suggests the recitations set forth in claim 8 (and, by extension, neither teach nor suggest the invention as recited in dependent claims 9-14).

With reference to amended claim 15, note that the invention is recited as having the recesses that extend through the first of two buried insulator layers. For the reasons set forth above Applicants respectfully submit that the Wu and Houston patents neither teach nor suggest the combination of features set forth in amended claim 15 (and, by extension, neither teach nor suggest the invention as recited in dependent claims 16-20; note that claim 19 has been amended to make it consistent with claim 15 as amended herein).

Accordingly, Applicants respectfully request entry of the present Amendment and passage of their subject application to issuance in view thereof. Should the Examiner have any comments, questions, or suggestions, please do not hesitate to contact the undersigned attorney at the telephone number and/or email address set forth below.

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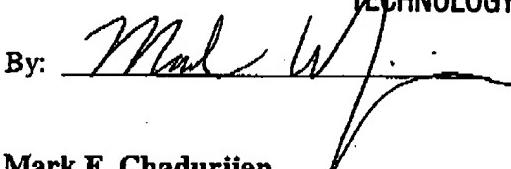
Respectfully submitted,

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